



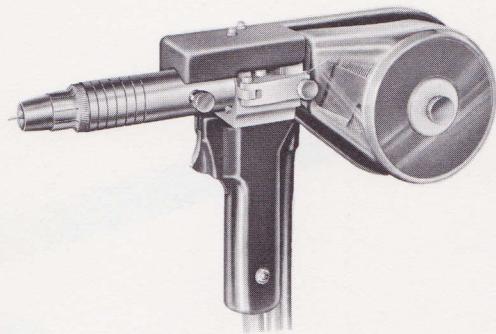
inert arc welding division  
2900 52nd ST., BLADENSBURG, MD.

## **SOXCO** - MIGWELD • type SA-100 series portable hand gun and control

descriptive  
bulletin

**S 26-523**

for gas-shielded, consumable electrode  
welding • 200 amps d-c, 100% duty cycle



### check these important features:

- **maximum portability** — Now, you can use semi-automatic welding where at one time, only stick electrode welding was possible. It is also possible to weld non-ferrous materials in previously "impossible" locations.
- **extreme versatility** — With the various control monitors and attachments available, it is possible to use the SOXCO MIGWELD for almost any application.
- **increased economy** — As much as 40% to 60% savings in many applications.
- **ease of handling** — The combination of lightness (gun complete with one-pound spool weighs less than four pounds) and proper balance reduces operator fatigue.
- **cleaner longer production welding** — Up to 25 minutes of production welding from a one-pound spool of aluminum wire. No slag to chip or stubs to sweep up.
- **travel speed** — Up to 24 inches per minute on  $\frac{1}{4}$ -inch fillets with  $\frac{1}{8}$ -inch aluminum wire.

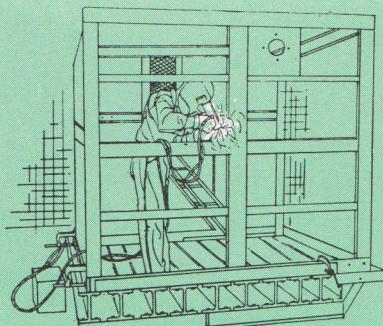
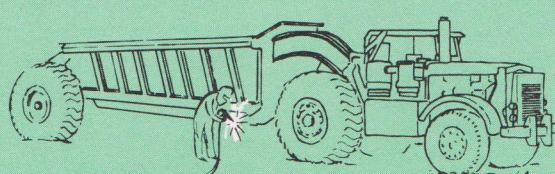
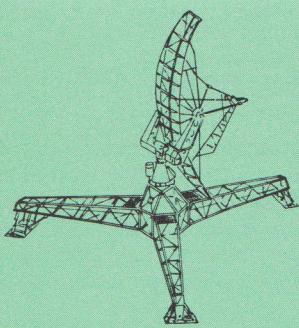
### hand gun and control monitor

The new 100% duty cycle SOXCO MIGWELD with any of the specially designed control monitors, makes the gas-shielded welding of practically any production metal a quick-starting — high-speed — "automatic" operation. The hand gun will weld in all locations without the usual need to move the wire drive control and the welding machine. It welds steadily throughout production line processes. Or, just as easily, in hard to get at confined quarters. The control monitors make it possible to use the SOXCO MIGWELD with any d-c welding power source of the constant current or constant potential types. Southern also make available a control monitor which will operate from either a-c or d-c auxiliary power. This now makes the equipment readily adaptable for use with gasoline or diesel engine driven generators.

### applications

The welding gun with the appropriate control monitor and welding power source will increase production in almost any application, such as . . .

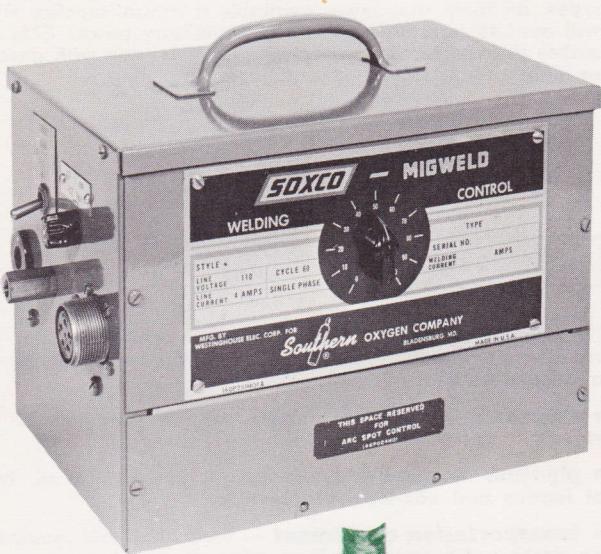
- **shipyard** — Excellent results can be obtained in previously "impossible" locations.
- **pipeline** — Top-quality welds are possible on all types of ferrous and non-ferrous pipework.
- **transportation equipment** — Production and repair time on trucks and automobiles is greatly reduced.
- **aircraft manufacture** — Because of the vast amount of non-ferrous metals used and the small working spaces, this equipment is almost essential in the aircraft industry.
- **electronics industry** — Invaluable in the construction of radar antennas, wave guides, etc., both for production welds and arc-spot welds.
- **general maintenance** — The most valuable tool in or out of the repair shop.





### type CC-1 and CV-1

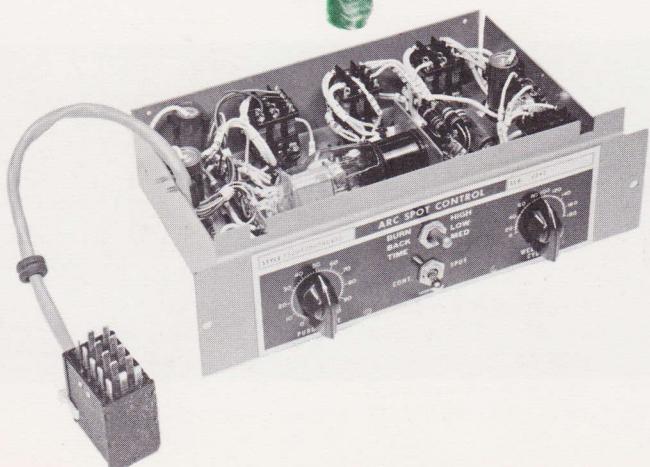
If you wish to use your SOXCO MIGWELD with a standard constant-current d-c welder, choose the "CC-1" control monitor. With a standard constant-potential d-c welder, choose the "CV-1" control monitor. A single dial setting is all that is required for these control monitors to automatically control the welding operation by instantly detecting the slightest variation in welding conditions or operator technique, and automatically rebalancing the system. Result—constant, top-quality welds.



### type CCS and CVS

If Arc-Spot welding is anticipated at a later date, choose the "CCS" control monitor as a voltage sensing system, or the "CVS" control monitor for use with a constant potential welding power source. Both control monitors have provision for mounting an Arc-Spot control.

"slip-in" nozzle

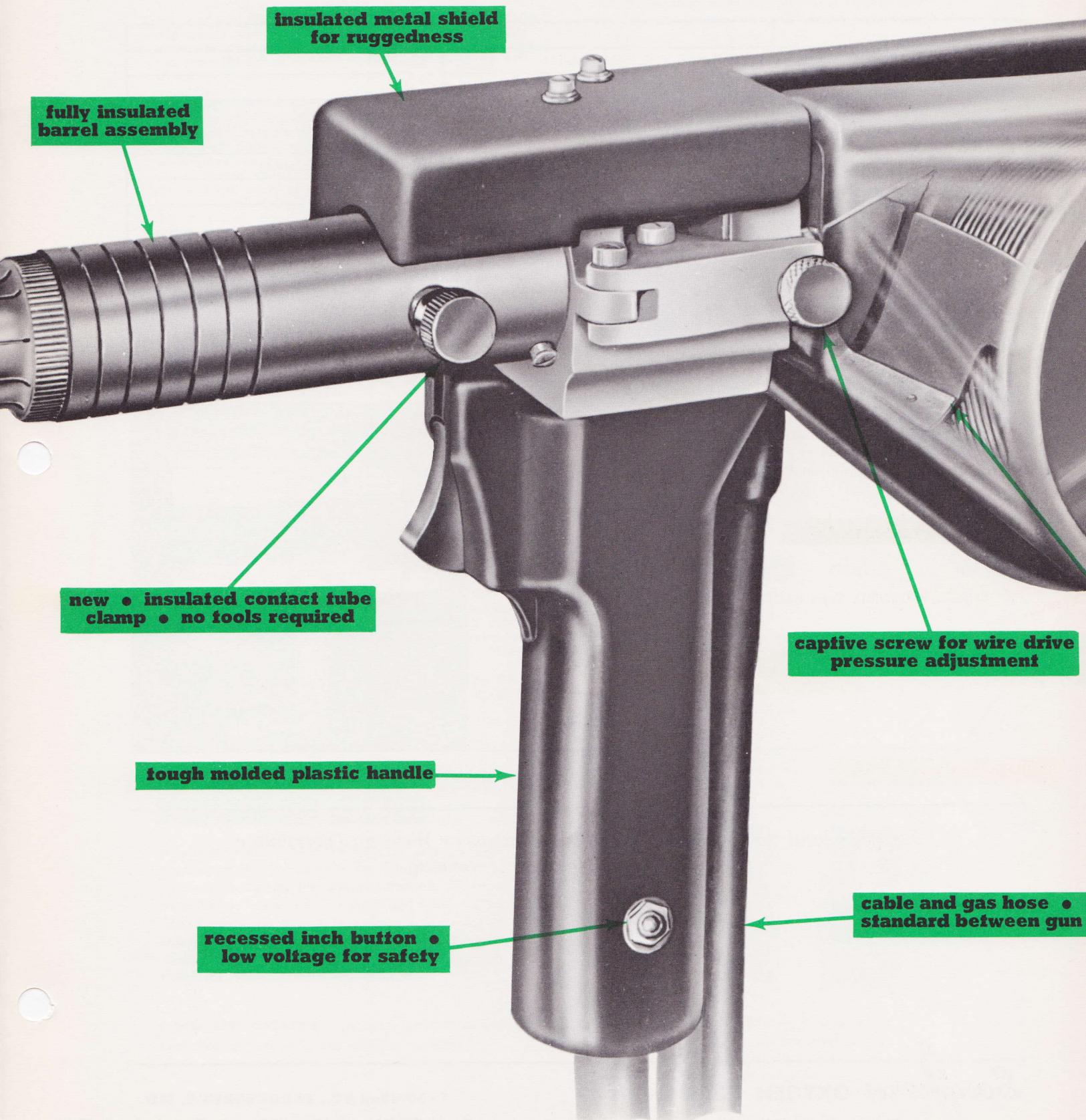


### Arc-Spot type CCAS, CVAS

The Arc-Spot control is a self-contained electronic timer with controls to set the timing of all arc-spot welding applications. The addition of this control will greatly increase the versatility of your SOXCO MIGWELD. Two models of Arc-Spot control are available, the "CCAS" to be used with the "CCS" control monitor and the "CVAS" designed expressly for installation in the "CVS" control monitor.

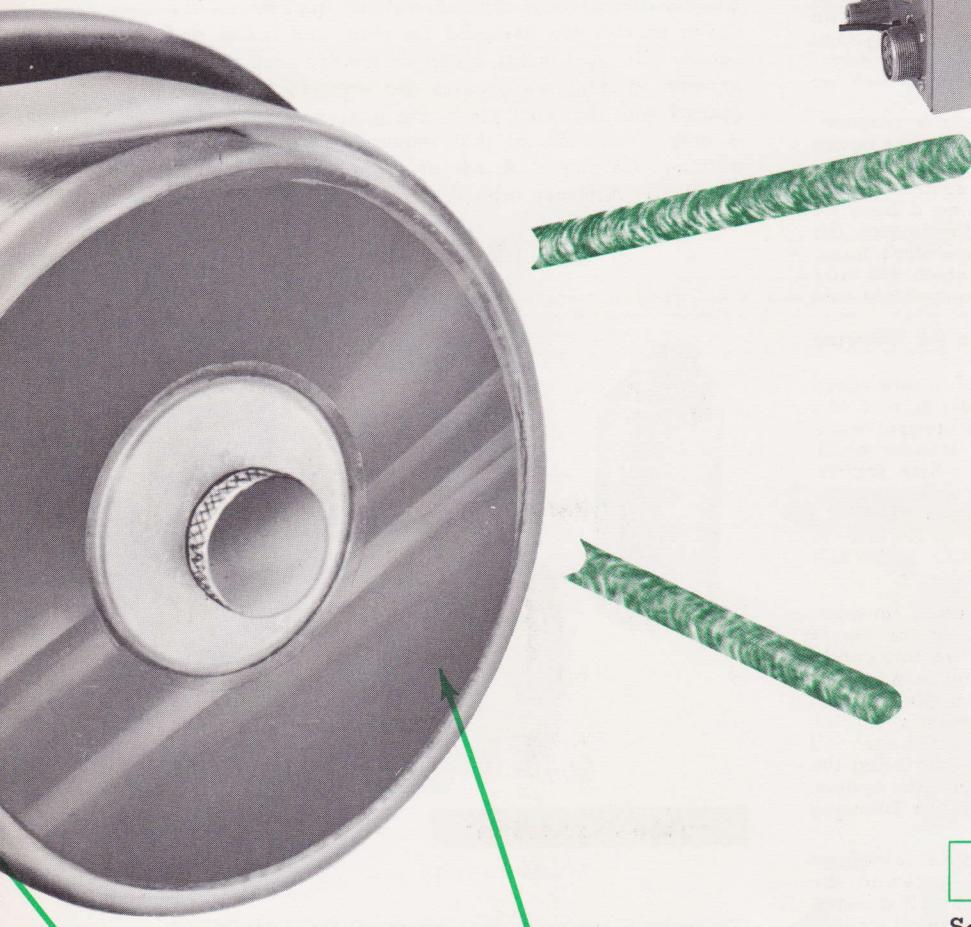
# **SOXCO** - MIGWELD

An extremely light weight and portable production tool that drives its own, self-contained supply of welding wire. The versatility of the SOXCO MIGWELD is greatly increased by the choice of control monitor — one choice being the "Power Pack", an entirely self-contained welder and control monitor. The SOXCO MIGWELD and the control monitors are fully insulated for operator safety.



### **type CCD**

Now you can use your SOXCO MIGWELD for field welding with your engine driven welder. The "CCD", control monitor will operate from either the auxiliary d-c power supplied by your welder or conventional 115-volts a-c. The "CCD" is fool-proof—no switches to operate or reconnections to make—just plug in and weld. The control monitor has been specially designed to further increase the versatility of the SOXCO MIGWELD.



**adjustable wire brake**

**high-impact plastic shield  
for wire protection**

**0 feet  
and monitor**

### **welding wire**

Southern Oxygen Company offers welding wire of various alloys to meet your most exacting requirements. This wire is of uniform diameter, consistent analysis, annealed, and with proper cast that will allow free payoff.

It is of utmost importance that high quality wire designed and manufactured specifically for SOXCO MIGWELD be used.

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**SOXCO MIGWELD • type SA-100 series**

portable hand gun and control

### systems

Two types of welding systems are available; Voltage Sensing and Constant Voltage. The choice is, of course, dependent upon the type of welder being used. No matter which control monitor is used with either system, the function of the control monitor is always the same; to set and automatically maintain the desired welding conditions.

• **voltage sensing** — This system uses a constant-current d-c welder, where arc current is set at the power source and remains relatively constant unless purposely readjusted. Setting a single knob on the control monitor determines the arc voltage by establishing a base for the wire-feed speed. Any condition tending to vary the arc voltage, such as movement of the operator's hand, will be "sensed" by the control monitor which will vary the wire-feed speed for an instant to compensate and rebalance the system.

Voltage sensing systems are available in the following combinations:

**SA-110** — This combination consists of a low-speed "SP-3" SOXCO MIGWELD, a constant current d-c welder, and a "CC-1" control monitor. If arc-spot welding is anticipated, use a "CCS" control monitor which has provision of installing a "CCAS" Arc-Spot control. The "CCD" control monitor allows for welding in locations where only d-c auxiliary power is available.

**SA-111** — This combination is the same as the SA-110 except that a high-speed "SP-4" SOXCO MIGWELD is used.

• **constant voltage** — This system uses a constant-voltage d-c welder. The output voltage of the power source is chosen and set for the desired welding conditions, while the single knob on the control monitor sets a fixed wire-feed speed. In this system, the rate of wire feed determines the amount of welding current. Any condition tending to vary the arc voltage will cause the current to vary for an instant and bring the arc back to its original length and rebalance the system. Constant voltage systems are available in the following combinations:

**SA-120** — This combination consists of a low-speed "SP-3" SOXCO MIGWELD, a constant potential d-c welder and a type "CV-1" control monitor. If arc-spot welding is anticipated use a type "CVS" control monitor which has provision for easily installing the "CVAS" arc spot control.

**SA-121** — This combination is the same as the SA-120 except that a high-speed "SP-4" SOXCO MIGWELD is used.

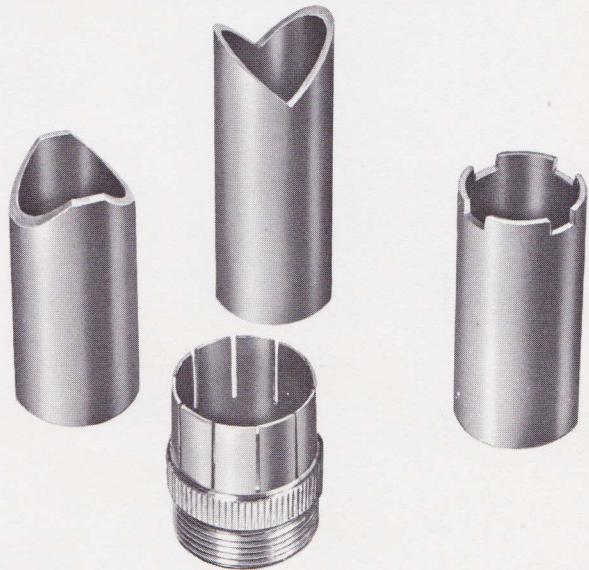
### associated equipment

It is recommended that the welding power source used with this equipment be equipped with a contactor to break the welding current. When a contactor is used, the gun parts and wire will be "dead" until the trigger is activated. A contactor control circuit is incorporated in all gun and control monitor models. To select the correct contactor, refer to price list S 26-523.

• **primary contactor** — primary contactors are available for use with any rectifier welder.

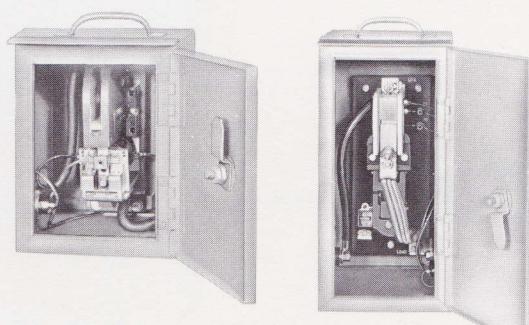
### arc-spot welding

Interchangeable SOXCO MIGWELD nozzles are available for almost every arc-spot welding application. The slip-in nozzles are designed for plug, and inside and outside fillet spot welds. Since the nozzles used in most arc-spot welding applications are invariably in direct contact with the work piece, the gas volume required is only about 25% of that required for conventional welding operations. A set of three nozzles and an adaptor is furnished with the Arc-Spot control.



### cable extensions

The cables and hoses between the SOXCO MIGWELD and control monitor may be extended to increase the maneuverability of the SOXCO MIGWELD. These cables and hoses are available in 50-foot lengths complete with the necessary connectors.



• **secondary contactor** — A secondary contactor is available for use exclusively with the "CCD" control monitor. Also available is a secondary contactor for use with all SOXCO MIGWELD control monitors.

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### SOXCO MIGWELD • type SA-100 series

portable hand gun and control

### specifications

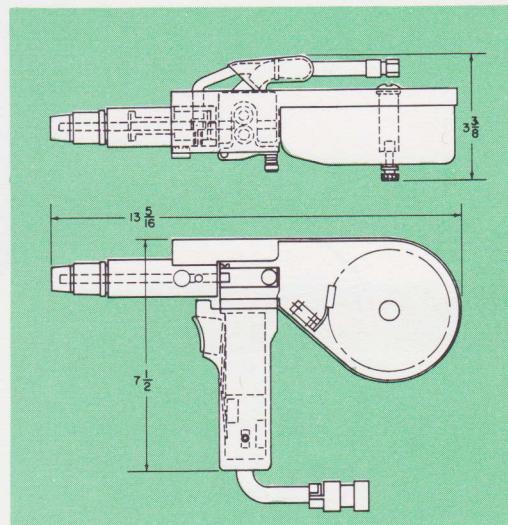
designation	SA-110	SA-111	SA-120	SA-121
hand gun	SP-3 (120-450 ipm)			
control monitors	CC-1 CCS* CCD (115-volts a-c or d-c)		CV-1 CVS*	
type of power source required	d-c constant current		d-c constant potential	
duty cycle of gun	100% duty cycle			
line voltage (controls)	110-volts, 60-cycles, single-phase			
line current (controls)	4 amperes			

\* For arc-spot, add a "CCAS" or "CVAS" Arc-Spot control.

### licensing

If this equipment is to be used both at reverse polarity and with inert shielding gas, licensing is required under U.S. Patent 2504868. If the user is not already licensed a copy may be obtained by contacting your Southern Oxygen Sales Representative.

### dimensions



### further information

Price List 26-523

SOXCO MIGWELD, Type SA-100 Series

See your local Southern Oxygen Representative or Welding Distributor  
for further information . . . pricing.

**Southern OXYGEN COMPANY**  
Division of Air Products and Chemicals, Inc.

Litho in U.S.A.

2900 52nd ST., BLADENSBURG, MD.

International Division, 3 West 57th St., New York 19, N. Y.



# **SOXCO**- MIGWELD • Type SA-100

portable hand gun and control

for gas shielded consumable electrode welding  
200 AMPERES • 100% Duty Cycle

price list

**S26-523**

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**Models SA-110 and SA-111**

Voltage-Sensing systems designed for use with constant current machines — those which produce a drooping volt-ampere curve.

**Models SA-120 and SA-121**

Constant Voltage systems designed for use with welding power supplies of the relatively flat volt-ampere types.

**Prices**

Net — All Zones

Model	System	Gun		Package Consists of Control				Complete Price
		SP-3	SP-4	CC-1	CCS	CCD	CV-1	
SA-110A	Voltage Sensing	437		333				\$770
SA-110B		437			358			795
SA-110C		437				378		815
SA-111A			437	333				770
SA-111B			437		358			795
SA-111C			437			378		815
SA-120A	Constant Voltage	437				333		770
SA-120B		437					358	795
SA-121A			437			333		770
SA-121B			437				358	795

**Equipment Description**

See D, B, S 26-523, for complete description

**SP-3 Gun** Fifty feet of cable and hose assembly is standard. Additional distance (up to 200 feet) between gun and control may be obtained by means of extension described elsewhere in this price list. Insulated knurled drive roll shipped as standard together with fittings for 1/16" diameter wire. Six guide tubes — three for 3/64" and three for 1/16" diameter wires are included. Order separate fittings for other wire sizes. Wire speed range when used with voltage-sensing type controls is 120 to 450 i.p.m., and 120 to 570 i.p.m. when used with constant voltage controls.

**SP-4 Gun** Similar to SP-3 gun except that wire speed range is 350 to 720 i.p.m. with voltage-sensing control; and when used with constant voltage type controls, 350 to 900 i.p.m. Shipped as standard with insulated smooth drive roll, fittings, and six guide tubes for .030" diameter wire. Order separately fittings for other wire sizes.

**Type CC-1** A voltage-sensing type of control. A built-in feature is the ability to adjust inching speed. Made to operate on 110 V A.C. single phase. Will operate either SP-3 or SP-4 SOXCO MIGWELD.

price list  
**\$26-523**

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**SOXCO MIGWELD • Type SA-100**  
portable hand gun and control

**Equipment Description**

— continued

**Type CCS** Same as the CC-1 except that provisions have been made in the control wiring to allow easy addition, now or at a future time, of an arc spot timer control-type CCAS. To install this feature, merely remove front panel of control, insert spot control and plug in to existing circuitry.

**Type CCD** A voltage-sensing type control similar in construction to type CC-1 described above but designed to operate either from 115 V A.C. or 115 V D.C. input power. Usable with either the SP-3 or SP-4 SOXCO MIGWELD.

**Optional Equipments**

**Type CCAS** Control including electronic timer to accurately measure timed welds to 180 cycles. A feature of this control is the ability to vary approach-to-the-work speed for arc spot welding. A built-in toggle switch allows the timer unit to be quickly removed from the circuit for conventional welding. Designed to be used with the CCS control. Package includes inside, outside and plug style nozzles together with slip-in type adapter for guns. Adaptable for either low-speed SP-3 gun or high-speed SP-4 gun.

Price — All Zones ..... \$359.00 Net

**Type CV-1** Similar in construction to the CC-1 control described above but circuitry designed for operation from constant voltage power supplies, those of the flat or relatively flat volt-ampere curve variety.

**Type CVS** Functionally similar to the CV-1 control but with provisions made in circuitry design and manufacture to allow easy attachment of type CVAS arc spot timer, now or at a later date. Easily installed, this timer and suitable nozzles permit many more operations to be performed by your SOXCO MIGWELD and will result in additional cost savings in your weldments.

**Type CVAS** Control similar in functions to type CCAS described above except for use with CVS control monitor. Package includes nozzles and adaptors for arc spot welding and is very easily installed.

Price — All Zones ..... \$359.00 Net

**Cable & Hose Extensions** 50 foot lengths nested and bound. Complete with cable and fittings, hose connection and amphenol male and female plugs. Maximum recommended number of extensions used with any system is dependent on the voltage drop that can be tolerated in the system — usually 200 feet is extreme maximum.

Price — All Zones ..... \$95.00 Net



price list

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**SOXCO MIGWELD • Type SA-100**  
portable hand gun and control**Additional Accessory Equipment**For Use With Either CC-1  
or CCS ControlsFor Use With Either CC-1  
or CCS ControlsFor Use With  
CCD Control

Pilot Relay in enclosure 12 ampere rated 110 V coil — to be used with welder in which primary contactor is built in and requires only "closing circuit" to actuate.

301B678G01 \$ 24.50

Two-Pole Primary Contactor for single phase welders — size 2 in enclosure with 110 V coil. 45 ampere, 8 hr. continuous rating.

1605615 \$ 68.00

Three-Pole Primary Contactor for three phase welders, size 1 - in enclosure - with 110 V coil. Used where only 22.5 ampere, 8 hr. continuous ratings are required.

1578570 \$ 36.00

Three-Pole Primary Contactor for three phase welders — size 2 - in enclosure - with 110 V coil. 45 ampere, 8 hr. continuous rating.

1577555 \$ 76.00

Single-Pole Secondary Contactor for motor generator sets with 110 V A.C. coil in enclosure with inlet and outlet female Cam-Lock receptacle case installed. Two male Cam-Locks supplied with unit.

582D403G01 \$145.00

Single-Pole Secondary Contactor for installation where only D.C. is available for control. Equipped with 110 V D.C. coil in enclosure with inlet Cam-Lock female mounted — male supplied and outlet equipped with 3 ft. No. 2 cable and male Cam-Lock to fit control.

582D430G01 \$150.00

price list

**\$26-523**

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**SOXCO MIGWELD • Type SA-100**  
portable hand gun and control

**Spare & Replacement Components**

Description	Suggested Quantity		Style #
	One Gun	Ten Guns	
Gear Head Mechanism SP-3	1	1	429C550G01
Gear Head Mechanism SP-4	1	1	429C550G02
Gas Nozzles 1/16" wire	5	25	311B703H02
Gas Nozzles 3/64" wire	5	25	311B703H02
Gas Nozzles .035" wire	5	25	311B703H02
Gas Nozzles .030" wire	5	25	311B703H03
Gas Nozzles .020" wire	5	25	311B703H03
Guide Tube 1/16" wire	10	50	306B172H10
Guide Tube 3/64" wire	10	50	306B172H09
Guide Tube .035" wire	10	50	306B172H04
Guide Tube .030" wire	10	50	306B172H03
Guide Tube .020" wire	10	50	306B172H01
Nylon front guide 1/16" wire	1	2	220A338H02
Nylon rear guide 1/16" wire	1	2	205A007H01
Nylon front guide 3/64" wire	1	2	220A338H03
Nylon rear guide 3/64" wire	1	2	205A007H02
Nylon front guide .035" wire	1	2	220A338H01
Nylon rear guide .035" wire	1	2	205A007H03
Nylon front guide .030" wire	1	2	220A338H01
Nylon rear guide .030" wire	1	2	205A007H03
Nylon front guide .020" wire	1	2	220A338H01
Nylon rear guide .020" wire	1	2	205A007H03
Knurled drive roll .035" wire or larger	1	2	419A009G01
Smooth drive roll .030" wire or smaller	1	2	419A009G02
Insulated Idler Roll	1	2	557D415H39
High-Impact Plastic Bubble	1	5	311B711G01
Insulated guide tube lock screw	1	5	422A505G01
Nozzle Adaptor	1	2	419A003H01
Inch Micro Switch	1	2	301B663H09
Trigger Micro Switch	1	2	44A3880H17
Inside corner arc spot nozzle	1	5	311B774G03
Outside corner arc spot nozzle	1	5	311B774G01
Plug arc spot nozzle	1	5	311B774G02
Insulated Guide Tube Lock Screw	1	2	422A505G01
Arc Spot Nozzle Adapter	1	2	422A453G01

**When Ordering, Specify:**

- (1) Model Number (SA-110A, B, or C — SA-111A, B, or C — SA-120A or B — SA-121A or B)
- (2) Optional Equipment (Arc Spot Models CCAS or CVAS and extensions)
- (3) Spare and Replacement Parts
- (4) Additional Accessories (Contactors — Relays)
- (5) Size and Type of Welding Wire

**Delivery**

F.O.B. your plant

**Southern OXYGEN COMPANY**  
DIVISION OF AIR PRODUCTS AND CHEMICALS, INC.

**2900 52nd ST., BLADENSBURG, MD.**

**International Division, 3 West 57th St., New York 19, N. Y.**

**litho in U.S.A.**